



MAKING A CORPORATE COMMITMENT

SITE SPECIFIC ADVICE - ASSESSMENT SUPPORT PACK

Company	
Location	
Date	

Document Objectives & Contents

The objective of this document is to facilitate a fast and impartial assessment of current energy efficiency status in a form that can be directly entered as data. It is aligned to the Department of the Environment, Transport and the Regions (DETR) Making a Corporate Commitment (MACC) programme which has 7 key components. The current status for each of these components is assessed on a scale of '0' to '4' where '4' represents current best practice, and '0' identifies very little or no progress.

The 'CURRENT STATUS SUMMARY' is a grid that takes results from four 'ORGANISATIONAL MATRICES'. These provide assessments aligned to an organisation's activity in the areas of 'Management', 'Admin & Finance', 'Operational', and 'Technical'. Underpinning these, are a number of 'Detail Matrices' defining specific areas of activity to be used as appropriate.

Contents

Document Objectives & Contents	2
Contents	2
How to Use	3
 CURRENT STATUS SUMMARY (blank document).....	4
 SIMPLIFIED STRUCTURE MAP.....	5
 ORGANISATIONAL MANAGEMENT MATRIX	6
ORGANISATIONAL ADMIN & FINANCE MATRIX	7
ORGANISATIONAL OPERATIONAL MATRIX	8
ORGANISATIONAL TECHNICAL MATRIX.....	9
 Detail Matrix 1 - AIRCONDITIONING SYSTEM CONTROL	
Detail Matrix 2 - AIRCONDITIONING SYSTEM SELECTION	
Detail Matrix 3 - BOILERS CONTROL AND CONTROLLABILITY	
Detail Matrix 4 - BUILDING FABRIC	
Detail Matrix 5 - BUILDING MANAGEMENT SYSTEMS	
Detail Matrix 6 - BUILDING SERVICES OPERATION AND DOCUMENTATION	
Detail Matrix 7 - ENERGY MANAGEMENT PRACTICE	
Detail Matrix 8 - HEATING SYSTEM CONTROL AND CONTROLLABILITY	
Detail Matrix 9 - HOT WATER	
Detail Matrix 10- LIGHTING	
Detail Matrix 11 - MAINTENANCE	
Detail Matrix 12 - MONITORING & TARGETING	
Detail Matrix 13 - SMALL POWER	
Detail Matrix 14 - SPACE HEATING	

Energy Management Matrix from GIR 12/13

How to Use

The organisation's status related to the MACC commitment is summarised in the 'CURRENT STATUS SUMMARY'. Figures for each of the grid positions are sourced from the four 'ORGANISATIONAL MATRICES'. These assessments are in turn derived either from direct assessment, or by taking information from the 'Detail Matrices'.

Each of the matrices has up to seven columns. Each column covers a discrete topic related to energy efficiency performance. The current status for that topic is assigned to one of five levels – '0' to '4'. Level '4' represents current best practice. Level '0' identifies that very little attention has been given. The intermediate levels then grade achievement within these bounds. As a guide to the impact on energy efficiency, each level represents a change in consumption of 8 – 10%, or 40 to 50% overall.

Levels '3' and '4' will generally represent compliance with MACC objectives. Level '3' is likely to be appropriate for smaller organisations where level '4' would not be viable. Larger organisations may find it appropriate to operate at level '4', providing viability exists.

In assessing information from the 'Detail Matrices', and the 'Operational Matrices', due account must be taken of the matrix 'balance'. For example, it is pointless having high levels of investment without adequate reporting on achieved performance. Without that reporting, there will be little justification for future investment. The objective is to operate at, and advance in balance. Plus or minus one level about the mean is acceptable. Any results significantly above this mean are unlikely to contribute to the current energy efficiency status.

Detail Matrices should be used when the topic has been identified for action. It is not necessary to use all columns – they may not be relevant.

Experience from completion of matrices is that once the significance of level '0' and level '4' have been explained, very little if any further explanation is required. The time for completion is 30 to 40 seconds per column.

It is important that the matrices represent the achieved status, and not the image. Should there be any doubt, then evidence of achievement should be obtained.

CURRENT STATUS SUMMARY (using results from ‘Organisational matrices’)

Organisation Date Completed by

Level	MACC - 1 Publish Policy	MACC - 2 Energy Management Responsibility Structure	MACC - 3 Monitor & Evaluate Performance Levels	MACC - 4 Set & Maintain Performance Improvement Targets	MACC - 5 Increase Energy Efficiency Awareness	MACC - 6 Hold Regular Reviews	MACC - 7 Report Performance Changes & Improvements
Management							
Admin & Finance							
Operational including Maintenance & Production							
Technical							

SIMPLIFIED STRUCTURE MAP

Level	MACC - 1 Publish Policy	MACC - 2 Energy Management Responsibility Structure	MACC - 3 Monitor & Evaluate Performance Levels	MACC - 4 Set & Maintain Performance Improvement Targets	MACC - 5 Increase Energy Efficiency Awareness	MACC - 6 Hold Regular Reviews	MACC -7 Report Performance Changes & Improvements
Management	Policy	Responsibility assignment list	Information systems	Standards of performance	Marketing	Evidence of review	Performance reports to management & shareholders
Admin & Finance	Policy review	Tariff management Lease terms re energy efficiency	Monitoring & targeting data quality - fixed assets. Energy monitoring Energy targeting Energy waste detection Holiday management	Contracts - energy performance requirements Office small power Contracts – energy efficiency post completion audits Design briefing to include energy efficiency	Knowledge base – administration awareness	List of investment candidates Investment performance	Quality of energy reporting
Operational including Maintenance & Production	Policy review	Maintenance Heating controls Air infiltration Combustion Air handling control	Energy efficient operation - method statements Water leak control Lighting controls Energy sub metering Water use management	Heating time accuracy Heating temperature Water l/person/day KWh/m ² Lighting levels lm Lighting maintenance standards	Motivation + (awareness campaign) Staff training in energy efficiency Knowledge base on energy efficiency	Maintenance quality control	Performance reporting – operational
Technical	Policy review	Energy efficiency technical strategy	Electricity supply capacity/transformer loading Heating balance Hot water efficiency Lighting equipment Pumping control Air conditioning	Controllable systems Boiler-house standing losses	Knowledge base on energy efficiency operational and strategic options	Minimisation of environmental impact alternative approaches Commissioning standards Design standards review Design philosophy	Review of environmental impact – annual

ORGANISATIONAL MANAGEMENT MATRIX

Level	MACC - 1 Publish Policy	MACC - 2 Energy Management Responsibility Structure	MACC – 3 Monitor & Evaluate Performance Levels	MACC - 4 Set & Maintain Performance Improvement Targets	MACC - 5 Increase Energy Efficiency Awareness	MACC - 6 Hold Regular Reviews	MACC -7 Report Performance Changes & Improvements
4	Energy policy, action plan and regular review have commitment of top management as part of an environmental strategy.	Lists of responsibilities and their assignment exist, are comprehensive and regularly reviewed. All staff have responsibilities.	Comprehensive system sets targets, monitors consumption, identifies faults, quantifies savings and provides budget tracking.	Comprehensive statement of energy efficiency exists. Greater than 90% of energy use is to written definitions of times, temperatures, light levels etc.	Energy efficiency tasks, duties, responsibilities, resource requirements and delivered performance reviewed annually. Planned dissemination of energy efficiency literature to all staff.	Formal audit carried out annually. External audit every three years. Full use of performance indicators based on internal ranked lists, building physics and external best practice. Formal management of audit action plan.	Regular production of simple easily understandable reports based on comprehensive information. Public reports externally audited. Includes comparative performance.
3	Formal energy policy, but no active commitment from top management.	Lists of responsibilities and their assignment exist for key energy staff and all departments.	M&T reports for individual premises based on sub-metering. Achieved performance against targets reported effectively to users.	Summary statement of performance exists. Greater than 80% of energy use is to defined service delivery levels. Written statements exist.	Occasional review of energy efficiency tasks, duties and responsibilities, resource requirements and achieved performance. Planned dissemination of energy efficiency literature to all staff	Formal audit carried out annually. Full use of performance indicators based on internal ranked lists, building physics and external best practice indicators. Formal audit action plan.	Regular production of simple easily understandable reports based on comprehensive information. Includes comparative information. Fully attributed.
2	Unadopted energy policy set by energy manager or senior departmental manager.	Some staff and departments have written responsibilities.	Monitoring and targeting reports based on supply meter data. Energy unit has ad-hoc involvement in budget setting.	Some areas of energy use have written energy efficiency standards relating to service delivery levels and equipment efficiency.	Occasional review of key energy efficiency indicators, duties and resource requirements.	Informal audit within annual report Performance indicators apply to annual consumption. Limited dissemination, end users may not understand how to benefit from the data.	Regular production of reports highlighting successes, but not necessarily presenting comprehensive picture.
1	An unwritten set of guidelines.	Unwritten set of responsibility assignments.	Cost reporting based on invoice detail. Engineer complies reports for internal use within technical department.	Informal standards exist. Some documentation exists.	Occasional review of energy efficiency. Scope is limited. Informal reporting.	Reviews are ad-hoc, prompted by external events. Informal use of performance indicators. Limited understanding by end users of significance of data.	Regular reporting by brief statements containing limited information.
0	No explicit policy.	No evidence of assignment of energy efficiency tasks and duties.	No information system. No accounting for energy consumption.	No evidence of standards for energy efficiency.	No formal review process exists. Occasional ad-hoc reviews.	No regular reviews. Little if any knowledge of performance indicators.	No reporting on regular basis. Occasional reports when prompted by events.

ORGANISATIONAL ADMIN. & FINANCE MATRIX

Level	MACC - 1 Publish Policy	MACC - 2 Energy Management Responsibility Structure	MACC - 3 Monitor & Evaluate Performance Levels	MACC - 4 Set & Maintain Performance Improvement Targets	MACC - 5 Increase Energy Efficiency Awareness	MACC - 6 Hold Regular Reviews	MACC - 7 Report Performance Changes & Improvements
4	Department has an energy efficiency policy covering all aspects of activities. Policy approved by board and in active use.	Active measurement of energy and water costs. Contracts monitored for appropriate energy efficiency. Systems effective and audited. Posts/people named with responsibilities.	Comprehensive quality controlled revenue and estate information to support energy monitoring. Regular reports, full follow up.	Pro-active control of contracts, purchases, leases etc. to ensure compliance. Consumption targets kept up to date and regarded as equitable. High level of identification of opportunities for improvement.	Maintains and uses easily accessed knowledge base that is up to date and appropriate. Staff given time for training on energy efficiency. High level of energy efficiency knowledge by staff.	Regular review of resource requirements. Comprehensive scope. Audited internally each year, externally at least every three years.	Full and factual supportive contribution to management reporting. In close contact with technical reporting and resource requirements. Regular easily understandable reports to staff and shareholders.
3	Written policy exists and covers main activities. 90% of staff aware and implement policy.	All staff well aware of their contribution to energy efficiency. Formally documented.	Regular quality controlled checks covering 80% of energy and water consumption. Full reporting and follow up.	Proactive control of major purchases and contracts. Consumption targets regarded as equitable. Some compliance checking and performance improvement.	Knowledge base/library exists and in use. Good level of staff awareness of work and domestic energy efficiency.	Regular review of resource requirements. Comprehensive scope. Audited internally.	Factual and supportive contribution to management reporting. Regular issue of easily understandable reports to staff and shareholders.
2	Informal policy based on a number of documents. High level of compliance. 80% of staff aware of the policy.	Formal list of staff responsibilities with greater than 60% able to fully detail their part.	Regular comparative checks on energy costs and consumption compared with industry figures.	Informal checks and contribution to contract terms made by experienced persons. Some identification of targets and opportunities for improvement.	Individual initiatives exist in energy efficiency, but no overall co-ordination.	Support to annual reporting process. Review process internally and mostly impartial.	Basic reporting issued and regularly in standard financial reporting format. Reporting to senior managers and premises management staff.
1	Informal policies exist but mainly unwritten. 50% of staff are aware of the policy.	Informal list of staff responsibilities. No compliance checking.	Occasional checks on some aspects of energy efficiency.	Occasional checks when prompted. Some records of performance targets exist.	Occasional publicity, not to defined programme.	Basic facts available on request. Information quality indeterminate.	Reports limited in scope, highlight good news, past mainly forgotten.
0	No policy exists	No list of energy management responsibilities.	Insufficient information available to properly support energy efficiency.	No awareness of performance targets, irregular and informal check on costs.	No organisational support to individual initiative.	No regular reviews.	Infrequent reports, not impartial.

ORGANISATIONAL OPERATIONAL MATRIX

Level	MACC - 1 Publish Policy	MACC - 2 Energy Management Responsibility Structure	MACC - 3 Monitor & Evaluate Performance Levels	MACC - 4 Set & Maintain Performance Improvement Targets	MACC - 5 Increase Energy Efficiency Awareness	MACC - 6 Hold Regular Reviews	MACC - 7 Report Performance Changes & Improvements
4	Department has its own detailed policy, agreed by management. Covers all activities. Reviewed annually.	Departmental responsibilities documented. All tasks, duties and responsibilities assigned to groups/post-holders. Defined review and audit processes.	Monitoring extent and operation sufficient to fully characterise energy and water use. Competent analysis, latency held to minimum. Properly resourced.	Operation methods and settings for best energy efficiency defined and implemented. Full utilisation of feedback from monitoring.	Energy efficiency performance regularly presented to all staff. Senior staff fully aware of current status. Full use of publicity.	Management actively contribute to regular energy and water efficiency reviews. Formally performance comparison against internal and external references. Ideas actively sought.	Comprehensive public reporting of current performance, compared against realistic targets, immediately understandable by audiences. Effectiveness proven by market surveys.
3	Main policy requirements known by key staff. Local detail for implementation exists.	Departmental tasks and responsibilities documented, most are formally assigned. Regular formal review.	Monitoring function fully operational. Delivered performance measured, targeted and regularly audited. Some identifiable gaps in key activities.	Delivered conditions and operating methods for best energy efficiency defined and implemented. Informal use of information from monitoring.	Energy efficiency status presented to all staff at least annually. Greater than 50% of senior staff fully aware of current status. Occasional but widespread use of publicity.	Frequent energy efficiency reviews using monitored consumption and cost data. Analysis is regular, wide-ranging but ritualistic.	Current performance publicly reported. Limited presentation of targets comparative performance. Every opportunity taken.
2	Main policy requirements known by some staff. Informal implementation at local level.	Staff responsibilities for energy management defined at individual level, some evidence of co-ordination across organisation.	Monitoring function operational. Regular consumption reporting, limited comparative reporting. Some aspects of delivered performance checked and reported.	Delivered conditions and operating methods documented, some checked at least annually.	Energy performance presented to staff at least once per year. Greater than 20% of senior staff aware of current status. Occasional use of publicity.	Occasional technical energy efficiency reviews. Regular cost checks with exception reporting. Analysis of limited scope.	Statements about performance made regularly. Mainly 'good news'.
1	A few staff aware of policy existence. Low level or nil related activity.	A few staff have identified tasks and responsibilities. Little knowledge of the scope of their activities.	A few initiatives exist on monitoring. Generally not co-ordinated activities, results rarely used by senior management.	Delivered conditions requirements documentation not readily available. Except for safety related items, very few tests available.	Energy performance known to less than 10% of staff. Some informal policy.	Energy review activity based on revenue costs. Exception reporting only.	Occasional statements made, generally in response to prompting.
0	No initiatives except those driven by legislation.	No regular reporting.	Very little effort made to report to staff and customers.	No written policy.	No staff have explicit responsibilities or duties.	No monitoring activity to underpin review processes	Only reason for changing delivered conditions is complaints.

ORGANISATIONAL TECHNICAL MATRIX

Level	MACC - 1 Publish Policy	MACC - 2 Energy Management Responsibility Structure	MACC - 3 Monitor & Evaluate Performance Levels	MACC - 4 Set & Maintain Performance Improvement Targets	MACC - 5 Increase Energy Efficiency Awareness	MACC - 6 Hold Regular Reviews	MACC - 7 Report Performance Changes & Improvements
4	Department has own detailed policy / policies agreed by management. Covers all activities. Reviewed annually. High level of staff awareness of policy content.	All main activities covered by regularly reviewed comprehensive statements. All tasks, duties and responsibilities assigned. All staff have a documented general 'duty of care'.	Technical / premises staff and contractors fully aware of importance of, and fully utilise monitored data. Relevant staff able to competently assess data quality, interpret data and identify corrective action.	Design brief and operational standards kept updated and reflect current best practice. Regular compliance checking. Pro-active identification of improvement opportunities.	Continuous professional development properly resourced for technical and premises staff. Active technical library. All staff aware of need for energy efficiency and have ready access to domestic and non-domestic energy efficiency information.	Active encouragement of contributions to reviews. Full use of available information. Reviews a scheduled formal process. External audits part of process. Full reporting and wide distribution of findings.	Comprehensive reporting of current status compared with best practice, on regular basis and in appropriate language and terminology for audiences. Full support to public statements.
3	Department has own detailed policy / policies covering most activities. Reviewed annually. Majority of staff aware of existence of policy, some aware of detail content.	Most key activities covered by comprehensive statements. All key tasks duties and responsibilities assigned. All staff have a documented general 'duty of care'.	Technical / premises staff and contractors use monitored data to help define problems and confirm solution. Delivered performance checked regularly and deviations corrected	Design brief and operational standards kept updated and reflect current best practice. Occasional compliance checking. Good knowledge of best practice indicators.	Continuous professional development for technical and premises staff. All staff are aware of and have access to an energy efficiency library.	Technical and premises staff contribute to review process on a regular basis. Reviews offer comparative performance data on both energy consumption and costs.	Current status reports issued annually to shareholders and staff. Impartial reporting of performance to staff and departments at least quarterly.
2	Evidence of informal policy in place and in operation. Some aspects of policy issues exist as formally issued documents. No regular update	Some key activities covered by statements of responsibility. All staff aware of a general 'duty of care', though this is not documented	Delivered performance checked irregularly or when prompted by complaints. Repairs take account of impact on energy and water costs.	Design brief and operational standards exist as informal objectives that may not always include current best practice. Irregular compliance checks.	Technical and premises staff development mainly via professional and technical journals. Occasional initiatives to improve energy efficiency awareness of all staff.	Occasional review process that includes key energy and financial performance data and comparison with best practice.	Occasional issue of energy efficiency status reports. Concentrates on good news.
1	Informal policies practised by a few staff but no documentation or review.	Informal assignment of tasks, duties and responsibilities. Some, but not all key activities covered.	Delivered performance checked only when prompted by complaints. Calibrated instruments used to take measurements.	Limited knowledge of best practice performance indicators. No formal structure for setting or maintaining improvement targets.	Energy efficiency awareness generally low. A few staff have knowledge of energy efficiency techniques and facts. Little if any promotion of energy efficiency to staff.	Occasional review process mainly based on financial information	Reports only issued if prompted by a business need. Concentrates on good news.
0	No evidence of policy documentation.	Minimal if any evidence of assignment of energy management tasks, duties and responsibilities.	Delivered performance checked only in response to complaints. Instruments sometime used, but unlikely to be of known accuracy.	Little if any knowledge of best practice indicators. Very little if any targeting or checking of delivered performance.	Little if any knowledge of energy efficiency amongst staff. No attempt made to inform staff of techniques and benefits of energy efficiency.	No review process.	No reporting.

Detail Matrix 1 – AIRCONDITIONING SYSTEM CONTROL

Level	System Selection	System Design	Terminal Unit Control	Heating/Cooling Interlock	Humidity Control
4	Full BMS with extensive graphical operator facilities.	Excellent system design with additional energy efficiency features such as; demand based operation of main plant and occupancy control of terminal units, etc.	Occupancy based control with demand based signal to main plant. Wide deadband between heating and cooling (where appropriate).	Main plant (and terminal units) hardware/software interlocks with P&I mode to prevent unnecessary simultaneous heating and cooling. Alarm output if interlock fails or is overridden.	Minimal and efficient humidification. Uncontrolled dehumidification minimised.
3	Modern electronic DDC controls with good user interfaces, communication between controllers and optimum start/stop facilities.	Good system design with all expected energy efficiency measures such as; free cooling control.	Wide deadband between heating and cooling (where appropriate).	Main plant (and terminal units) hardware/software interlocks with P&I mode to prevent unnecessary simultaneous heating and cooling.	Efficient humidification. No controlled dehumidification.
2	Modern electronic DDC controls with communication between controllers, and optimum start/stop facilities.	Limited energy efficiency features, free cooling control expected.	Same as level '0'. Score '0' if close control not appropriate.	Same as level '0'. Score '0' if no interlocks,	Humidification and controlled dehumidification provided $\pm 10\%$ RH.
1	Standalone electronic controls. Time switch control of all plant. Or pneumatic controls with extensive BMS monitoring and 'executive control'*	Basic control of plant. Lack of expected energy efficiency features such as; free cooling control.	Same as level '0'. Score '0' if close control not appropriate.	Same as level '0'. Score '0' if no interlocks.	Humidification and controlled dehumidification provided $\pm 5\%$ RH.
0	Pneumatic controls with no monitoring. Time switch control of all plant.	Basic control of plant only.	Close control of heating and cooling where not appropriate.	No interlocks to prevent simultaneous heating and cooling.	Close control of humidity where not appropriate.

* Executive control is plant stop/start time control and override for holidays, etc.

Detail Matrix 2 – AIR CONDITIONING SYSTEM SELECTION

Level	System Selection	System Design	Chillers	Fan Power	Pump Power
4	Appropriate system selected with additional energy efficiency features.	Excellent system design with additional energy efficiency features.	Optimal chiller selection, sizing and hydraulic design. Evaporative cooling of condenser water or heat recovery, etc.	Most efficient fans, low loss ductwork, VSD regulation, etc. Less than 1W/1/s.	Well selected pumps, VSDs and variable flow control for distribution system, VSD regulation for constant flow, low loss system. Less than ?W/1/s.
3	Appropriates system selected.	Good system design with expected energy efficiency measures.	Good chiller selection, sizing and hydraulic design. Air cooled condensers or dry air coolers.	Good fan selection, good ductwork design. Less than ?W/1/s.	Well selected pumps, VSDs and variable flow control for distribution system. Less than ?W/1/s.
2	A/C necessary but inappropriate system(s) and/or features selected.	Reasonably sized but lack of expected energy efficiency measures.	Reasonable chiller selection and hydraulic design. Air cooled condensers or dry air coolers.	Reasonable fan selection and ductwork design. Less than ?W/1/s.	Reasonable pump selection but constant flow. Less than ?W/1/s.
1	A/C only necessary for parts of building - yet fully air-conditioned.	Poorly designed - Oversized plant, lack of expected energy efficiency measures.	Chiller selection OK but oversized - poor hydraulics. Air cooled condensers or dry air coolers.	Oversized fans, poor ductwork design. Less than ?W/1/s	Oversized pumps, high loss system. Less than ?W/1/s.
0	A/C not necessary - yet fully air-conditioned.	Very poor design - grossly oversized for application, etc.	Chillers poorly selected and/or grossly oversized - lead/lag - poor hydraulics. Air cooled condensers or dry air coolers.	Very oversized poorly selected fans, very poor ductwork design. Less than ?W/1/s.	Very oversized pumps, very high loss system. Less than ?W/1/s.

Detail Matrix 3 – BOILERS CONTROL AND CONTROLLABILITY

Level	Boiler Selection	Parallel Connected Boilers	Series Connected Boilers	Modular Boilers with Common Combustion Chamber	High/Low Fire Boilers	MACC - 6 Primary/Secondary Circuit Interaction
4	Very low standing loss boilers less than 0.5% of rated output.	Score '4' if requirements of '3' are satisfied and formal documentation exists on design intent and control settings.	Common primary pump. Proportional control from return temperature, or flow temperature control where adequate margin between set point and boiler thermostats. Control settings documented.	Full sequence control system with fixed firing order. Individual boiler thermostats in boiler outlet for control and high limit as per HSE PM5.	High fire correctly integrated into sequence control.	Decoupled via buffer vessel or large diameter common header.
3	Low standing loss boilers with losses down to 0.75% of rated output, common primary pump.	Common primary pump. Proportional control from return temperature, or flow temperature control where adequate margin between set point and boiler thermostats *.	Common primary pump. Proportional control from return temperature, or flow temperature control where adequate margin between set point and boiler thermostats *.	Only available scores are '0', '1' and '4'.	Score '4' if requirements of '4' are satisfied..	Score '4' if requirements of '4' are satisfied.
2	High standing loss boilers with losses in the range of 2% to 5% of rated output, fully isolated and cold when off line.	Only available scores are '0', '3' and '4'.	Only available scores are '0', '3' and '4'.	Only available scores are '0', '1' and '4'.	High fire set at lower temperature than low fire by margin of at least 6°C.	Score '1' if requirements of '1' are satisfied.
1	High standing loss boilers with losses greater than 5% of rated output, fully isolated and cold when off line.	Only available scores are '0', '3' and '4'.	Only available scores are '0', '3' and '4'.	Sequence control with fixed order of firing, but module control thermostats in module inlet in contravention of HSE PM5.	Score '2' if requirements of '2' are satisfied	Partially decoupled – header/buffer vessel size limited.
0	High standing loss boilers greater than 7% of rated output, not fully isolated when off line.	Individual pumps or motorised isolation valves with return temperature control. Inadequate margins with flow temperature control.	Series connected boiler without adequate control as defined at level '3'.	No sequence control, sequence 'achieved' by module control thermostats in module inlet in contravention of HSE PM5.	High fire set at higher, or same, temperature as low fire.	No decoupling, affected by compensator valve position, TRVs emitter isolation valves, etc.

* Margin for flow temperature control must include dilution for parallel connected boilers and boiler firing.

* Boiler thermostats must comply with HSE PM5. Pressurised systems normally required.

Detail Matrix 4 - BUILDING FABRIC

Level	Windows	External Doors	Roof Insulation
4	All windows are double glazed, and draught stripped, and window catches hold them tightly shut.	All external doors are draught stripped and have self-closing devices. Draught lobbies are provided.	Roof insulation is at least 150mm thick and continuous over whole roof area.
3	All windows are double glazed, and draught stripped.	Most external doors are draught stripped and have self-closing devices. Door locks hold them tightly closed.	Roof insulation is at least 100mm thick and continuous over whole roof area.
2	Windows generally are single glazed and draught stripped, and window catches hold them tightly shut.	External doors generally draught stripped.	Roof insulation is 150mm to 100mm thick generally, but there are visible gaps in the insulation.
1	Windows are single glazed but fit well with minimal draughts.	External doors fit well and catches hold them tightly closed.	Parts of the roof are insulated.
0	Windows are single glazed and poorly fitting with gaps visible around the edges.	External doors are poorly fitting and gaps are visible around the edges.	There is no roof insulation installed.

Detail Matrix 5 – BUILDING MANAGEMENT SYSTEM

Level	Statement of objectives	Accuracy of Measurement	Response to inefficient operation	Optimising Operating efficiency	Reporting	External audit
4	BMS installed correctly and regularly checked to ensure that it is operated in the most effective and efficient manner at all times to take into account variations in ambient, occupancy and workload.	All sensors regularly checked and calibrated against NAMAS. Environmental conditions such that calibration accuracy of sensors not affected. All externally owned meters verified to be within calibration.	Out of limit alarms flagged immediately. Indication of wastage (or usage) terms. Maintenance status report generated daily	Ensure that desired temperature profiles are maintained in accordance with space occupancy and shift patterns.	Concise management reports prepared to show deviation from optimum in both technical and financial terms. Data mining used to highlight peak/worst hour performance.	Portable monitors and recorders regularly used in both occupied and unoccupied areas to verify that temperature profile is maintained
3	BMS installed correctly and regularly checked to ensure that it is operated in the most effective and efficient manner at all times to take into account variations in ambient, and workload.	All sensors regularly checked and calibrated against NAMAS. Environmental conditions such that calibration accuracy of sensors not affected.	Maintenance status report generated daily	Ensure that desired temperature profiles are maintained in accordance with shift patterns	Concise management reports prepared to show deviation from optimum in both technical and financial terms.	Portable monitors and recorders used on a seasonal basis in both occupied and unoccupied areas
2	BMS installed correctly and regularly checked to ensure that it is operated in the most effective and efficient manner at all times to take into account variations in ambient.	All sensors checked seasonally and calibrated annually.	Maintenance status report generated weekly	Ensure that desired temperature profiles are maintained	Summary report of BMS data	Ad hoc use of portable monitors and recorders in both occupied and unoccupied areas
1	Temperature controlled by local space thermostats	Ad hoc checking of sensors	Maintenance Department carry out ad hoc checks on space temperatures	Ensure heating is turned off at weekends and in the summer.	Weekly report by Maintenance Department of daily space temperatures	Ad hoc hand checking of radiator temperatures
0	No BMS. Temperature controlled from boiler	No procedure for sensor checking, setting or calibration	No ability to measure or check operating efficiency	None -- heating may even be allowed to remain on 7 days/week	No measurements taken and no reports prepared	No auditing or monitoring

Detail Matrix 6 – BUILDING SERVICES OPERATION AND DOCUMENTATION

Level	Schematic Diagrams	Description of Operation	System Schedules	Maintenance Schedules
4	Detailed Schematic with fully referenced instruments, balancing valves, etc. Similar to GIR 40.	Fully detailed system concepts, detailed plant control and operation, etc.	Fully detailed schedules of all plant, instrumental and controls.	Fully detailed maintenance schedules for all plant and control systems.
3	Detailed Schematic with instruments, balancing valves, etc. Similar to GIR 40.	Detailed plant control and operation, basic system concepts.	Reasonably detailed schedules of all plant instrumentation and controls.	Reasonably detailed maintenance schedules for all plant and control systems.
2	System Schematic without some elements such as instruments, balancing valves etc.	Basic plant control and operation.	Basic plant instrumentation and control schedules for greater than 95% and control systems.	Basic plant maintenance schedules for greater than 95% plant and control systems.
1	Basic system Schematic without instruments, balancing valves etc.	Minimal, or poor plant control and operation.	Minimal or poor plant instrumentation and control schedules - Less than 85% of plant and control systems.	Basic plant maintenance schedules - less than 85% of plant control systems.
0	None available.	None available.	None available.	None available.

Detail Matrix 7 – ENERGY MANAGEMENT PRACTICE

Level	Management of energy management tasks, duties, responsibilities	Standards of supply	Measurement of delivered conditions	Contract terms	Physical checks	Energy management staff experience	Fuel and water purchasing
4	A comprehensive set of energy management duties is properly assigned to appropriate persons. All actively contribute to energy efficiency.	Documents exist defining internal temperatures, times of operation, lighting levels, permissible levels of standing losses, limits to control errors. All areas and activities covered.	Scheduled checks using calibrated instruments are made of all activities covered by the 'Standards of Supply' documents. Frequency of checks relates to expected rate or reason for change.	All purchase orders and contracts for supply of goods and services that impact on energy and water efficiency have explicit consideration for efficient operation at lowest overall cost.	All premises are covered by formal checks made to a schedule. Scope includes all items that could impact adversely on energy consumption, comfort or energy related productivity.	All staff / consultants undertaking energy management duties have appropriate levels of professional, technical, commercial, product knowledge, communication and management skills.	All fuel and water supply purchases and contracts are tariff adjudicated to meet formally defined business objectives. These include security of supply, costs and ability to accept business change.
3	A comprehensive set of energy management duties is properly assigned to all persons whose activity directly impacts on energy and water efficiency.	Direct reference is made to existing professional, technical and best practice publications.	Scheduled checks using calibrated instruments are made and compared with best practice guidance. Checks are made to a defined schedule.	Contracts for supply of goods and services that impact on energy and water efficiency are formally checked for inclusion of energy efficiency requirements.	Informal checks are made by appropriately trained staff for all items that could adversely impact on energy efficiency.	All persons (including consultants) whose work impacts on energy efficiency have appropriate levels of professional and technical skills.	All fuel and water purchases and contracts are subjected to a competitive bidding process. Larger accounts are checked for sensitivity to changing patterns of consumption to overall costs of supply.
2	Energy management duties are assigned to premises and technical staff.	Knowledge exists of maximum and minimum heating levels as defined by legislation.	Checks to ensure conformance with legislation are made at least twice a year in all heated spaces.	Contracts for supply of small power devices, and for maintenance define energy and water efficiency requirements.	Checks on heating levels and times of operation are limited to maintenance procedures. Formal reports made on existing and current status.	All staff whose work impacts on energy and water efficiency have at least basic energy efficiency training and knowledge of best practice.	Fuel and water purchases and contracts are competitively obtained.
1	Assumption is made that energy and water efficiency tasks, duties and responsibilities are part of existing duties. Staff may not be aware of these responsibilities.	Knowledge exists of minimum heating levels as defined by legislation.	Checks to ensure conformance with legislation are required as part of maintenance contracts or by landlord's agents. No feedback would normally be obtained from these checks.	Specification of energy efficiency requirements is applied to a limited number of contracts.	Checks are made when rooms are perceived to be uncomfortable. No routine checks made..	Staff and contractors whose work impacts on energy efficient operation have basic energy efficiency knowledge.	Fuel and water purchases and contracts are reviewed occasionally for lowest costs of supply.
0	No evidence of any assignment of energy efficiency duties.	Minimal if any knowledge of standards of supply of services.	Delivered performance only checked upon receipt of complaints.	Energy efficiency does not appear as a contract requirement.	No checks made.	No actual skills exist, though some level of skill may be implied.	No attempt made to ensure purchasing at lowest cost.

Detail Matrix 8 – HEATING SYSTEM CONTROL AND CONTROLLABILITY

Level	Primary/Secondary circuit interaction	Secondary circuit connections	Zoning	Pumps	Space Temperature Control – Radiators, natural convectors etc.	Space Temperature Control - Fan convectors
4	Decoupled via buffer vessel or large diameter common header.	All system flows at top of buffer vessel or at appropriate end of common header. Returns at bottom., etc.	Objective zoning for occupancy, solar gain, equipment gain, emitters, structure, etc. where appropriate.	Variable speed controlled from representative load, differential pressure, or reducing pump differential pressure with demand.	Proportional, or on/off, electronic control of each room or emitter, with occupancy sensing.	Full electronic proportional control of each room or emitter with fan interlock and occupancy sensing.
3	Score '4' if requirements of '4' are satisfied.	Score '4' if requirements of '4' are satisfied.	Score '4' if requirements of '4' are satisfied.	Score '4' if requirements for '4' are satisfied.	TRVs sized to provide 5kPa loss or equivalent authority. Horizontal or remote heads. Or electronic proportional or on/off control.	Full electronic proportional control of each room or emitter with fan interlock.
2	Partially decoupled – header/buffer vessel size limited.	Score '1' if requirements of '1' are satisfied.	Score '1' if requirements of '1' are satisfied.	Variable speed pumps controlled at constant pump differential pressure.	TRVs sized to provide 5kPa loss or equivalent for system design. Low level vertical heads. Or Bi-metal strip thermostats and 'zone' values.	Bi-metal strip thermostats, or TRVs with fan interlock.
1	Score '2' if requirements of '2' are satisfied.	Separate flow and return headers with logical connections.	Limited (appropriate) zoning of circuits	Score '2' if requirements for '2' are satisfied.	TRVs poorly sized, heads affected by convector or system temperature.	TRVs poorly sized, heads affected by convector or system temperature. No fan interlock.
0	No decoupling.	Separate flow and return headers with random connections.	No zoning where zoning desirable, or inappropriate zoning.	Constant speed pumps.	None fitted.	None fitted.

Detail Matrix 9 - HOT WATER

Level	Type of Installation	Timer/Programmer Settings	Calorifier Installation	Pipe-work Installation	Actual Water Temperature at Taps
4	Instantaneous local point of use water heaters or water heaters with localised storage and time controls.	Two or more visual and functional checks made each year against a formal document and results recorded. No pump or heating fuel used when building is unoccupied.	Not applicable	Not applicable	Water temperature at the taps is hot and no cold water has to be added for comfort.
3	Instantaneous local point of use water heaters or water heaters with localised storage without time controls.	Annual visual checks made using formal procedures and results recorded. No pump or heating fuel used when building is unoccupied.	Not applicable	All pipe-work in both unheated and heated spaces is well insulated and insulation feels cool to the touch.	Water temperature at the taps is hand hot but on occasions a little cold water has to be added for comfort.
2	Hot water is provided from a central boiler plant with 7-day timer/programmer that allows different settings for heating versus hot water and for weekend versus weekday.	Times of availability closely matched to demand. Separate time switching for water heaters, boilers and pumps. Regular checks on time switch settings	The calorifier is well insulated with insulation known to be more than 75mm thick.	All pipe-work in both unheated and heated spaces in well insulated and insulation feels cool to the touch.	Water temperature at the taps is hand hot and cold water has to be added regularly for comfort.
1	Hot water is provided from a central boiler plant, with timer/programmer serving both heating system and hot water.	Times of availability not specifically checked. Some pump or heating fuel used when building unoccupied.	The calorifier is insulated with 25-50mm insulation.	Pipe-work in unheated spaces is well insulated and cool to the touch.	Water temperature at the taps is too hot for comfort and some cold water has invariably to be added for comfort.
0	The only boiler controls are on/off and the boiler thermostat.	Times of availability not specifically checked. Significant use of pump(s) or heating fuel when building occupied.	The calorifier is poorly insulated and losing heat badly.	Pipe-work generally is not insulated or the insulation is thin, damaged or in poor condition.	Water temperature at the taps is very hot, and significant amounts of cold water have to be added for safety.

Detail Matrix 10 - LIGHTING

Level	Strip Lights	Small Lights	Switching Equipment	Replacement Policy	Lighting Diffusers And Shades	Operation in Use
4	A high proportion of strip lights are 26mm diameter high efficiency tubes with high frequency ballasts and specular reflectors.	All small lights are compact fluorescents.	Lights are switched in separate banks whose locations correspond to available daylight. Switches are clearly labelled to show which lamps they operate.	Light fittings, including diffusers, reflectors and ballasts are being upgraded to high efficiency replacements as a matter of urgency.	Diffusers and shades are selected for their high utilisation factor (translucency). There is an established routine for inspecting and cleaning diffusers on a regular basis.	Lights operate only as required. Where daylight is available, light output is adjusted to the minimum required. There is a routine for regular checking of artificial lighting usage.
3	A high proportion of strip lights are 26mm diameter high efficiency tubes with specular reflectors.	75% are compact fluorescent with tungsten in remainder.	Lights are switched in separate rows with switches located near the lights they operate. Switches are clearly labelled.	Light fittings, including diffusers, reflectors and ballasts are upgraded whenever opportunities allow.	Diffusers and shades are selected for their high utilisation factor and are cleaned occasionally.	Lighting levels and hours of operation are well controlled. Checks are undertaken periodically on an ad-hoc basis. Cleaners light their current working area only.
2	Most strip lights are 26mm diameter tubes with prismatic reflectors.	50% are compact fluorescent, with the remainder compact fluorescent.	Lights are switched in rows and switches are in the same space as the lights they operate. But rows do not correspond with daylight, nor are switches labelled.	Light fittings, including diffusers, reflectors and ballasts are being upgraded on an ad-hoc basis.	Diffusers and shades are of high utilisation factor, but are not regularly maintained.	Light levels are partially controlled. Lights are switched on only when they are required, and switched off at the end of the occupation period. No routine for checking usage.
1	Strip lights are 38mm diameter tubes with prismatic diffusers.	25% are compact fluorescent with the remainder tungsten.	Lights have the potential to be switched on in banks, but in practice all go on together.	Lamps and ballasts are sometimes upgraded when they are replaced to high efficiency types.	Diffusers and shades are of fair translucency but are rarely cleaned.	Lighting levels are partially controlled. All lights are switched on at the beginning of the day and operate continuously whenever the building is occupied, whether required or not.
0	Strip lights are 38mm diameter tubes with eggcrate or opal diffusers.	Traditional tungsten filament General Lighting System (GLS) lamps throughout.	Lights are switched from central locations and all go on together.	Lamps are replaced on a breakdown basis with like for like lamp types.	Diffusers and shares are of poor translucency and are never cleaned.	Lighting levels are uncontrolled. Lighting is frequently left on 24 hours per day whether the building is occupied or not.

Detail Matrix 11 – MAINTENANCE

Level	Condition surveys	Non-scheduled activities	Delivered quality	Contract scope	External audit
4	Regular surveys using formal condition appraisal methods carried out rigorously all equipment and fabric elements affecting energy efficiency. Formal use of energy consumption records and targets. Results formally distributed and acted upon where necessary.	Documented procedure for responding to reported problems. Procedures include adequate reporting on energy efficiency implications and include formal checks to ensure energy efficient operation is restored.	Documented procedure for checking that work has been satisfactorily completed and is in accordance with order. Full and detailed records kept.	Blanket open contracts with assessed and approved contractors with agreed response times and spares holdings.	Check to determine whether the work has been completed satisfactorily immediately on report from the contractor while contractor still on site.
3	Condition surveys carried out regularly on all equipment and fabric elements affecting energy efficiency. Ad-hoc use made of energy consumption and target information. Results formally distributed.	Documented procedure for responding to reported faults. Energy efficiency specifically considered in procedures.	Documented procedure for checking satisfactory completion of work. Records kept.	List of assessed and approved contractors with "fast-track" job authorisation.	Check to determine whether the work has been completed satisfactorily within one week of contractor reporting completion.
2	Condition surveys carried out regularly on all equipment and fabric elements affecting energy efficiency. Nil input from energy consumption records and targets. Remedial work constrained by budgets.	Repairs and adjustments carried out by local staff / contractor. Priority is maintenance / restoration of service. Energy efficiency known to be considered in actions taken, but not explicitly checked.	Ad hoc procedure for checking work carried out correctly	Contractors regularly assessed and approved list maintained.	Check with user that the contractor has completed work satisfactorily.
1	Condition surveys an occasional activity, often prompted by plant failure or safety considerations. Remedial work only carried on major defects.	Repairs and adjustments carried out by local staff / contractor. Priority is maintenance / restoration of service. Energy efficiency aspects not specified.	User department acceptance of work	List of contractors kept who have previously carried out work	Contractor to confirm that he has satisfactorily completed the work.
0	No regular surveys or maintenance carried out	No procedure to handle repairs and adjustments	No follow-up on completion of work	First available contractor employed	No follow up on completion of work.

Detail Matrix 12 – MONITORING AND TARGETING

Level	Operational requirements	Data sources	Administration	Analysis	Outputs	External audit
4	All data obtained up to date and competently analysed with minimum delay. Management and operational efficiency information provided in timely manner and appropriate detail.	Premises inventory and occupancy database updated quarterly. All data sources of assessed quality. Consumption data routinely obtained. Internal & external temperatures logged hourly and energy usage recorded on a shift basis.	All meter readings taken daily, temperature and other recorded data collated and combined with relevant trading and business data recording.	Energy usage analysis made with respect to fuel costs, business ratios, building usage and other relevant parameters. Accuracy of energy targeting and normalisation formally assessed against business needs.	Reports prepared and provided to managers in a concise form allowing both technical and financial data to be effectively utilised. Data normalised for ease of comparison. Impact of input data and algorithmic uncertainties defined.	Premises database checked annually for accuracy. Instrumentation calibration verified. Market fuel prices checked. Reports analysed for significant trends and anomalies.
3	All data obtained up to date and analysed so as to provide management information in adequate detail.	Premises inventory and occupancy database updated annually. All data sources calibrated. Internal & external temperatures logged regularly and energy usage recorded on a shift basis.	All meter readings taken weekly, temperature and other recorder data collated and combined with relevant trading and business data recording	Energy usage analysis with respect to fuel costs, business ratios usage and other parameters including prevailing weather. Comparisons possible with previous periods. Data accessible on a day by day basis	Reports prepared and provided to managers in a concise form allowing both technical and financial data to be effectively utilised. with deviations from budget and comparisons with previous period.	Premises database checked annually for accuracy. Instrumentation calibration verified. Market fuel prices checked.
2	Provision of budgetary figures base on usage in corresponding periods adjusted for changes in base data	Most data sources calibrated. Internal & external temperatures logged routinely and energy usage recorded weekly.	All meter readings taken monthly, temperature and other recorder data collated and combined with relevant trading and business data recording	Energy usage analysis with respect to fuel costs, building usage and other parameters including prevailing weather. Comparisons possible with previous periods. Data accessible on a weekly basis	Reports prepared and provided to managers incorporating both technical and financial data together with deviations from budget and comparisons with previous period.	Premises database checked annually for accuracy. Ad hoc cursory check on reports and comparison with previous year.
1	Provision of budgetary figures base on usage in corresponding periods	Records kept of consumption based on bills from suppliers	All meter readings taken quarterly, temperature and other recorder data collated and combined with relevant trading and business data recording	Energy usage analysis with respect to fuel costs, building usage and other parameters including prevailing weather. Comparisons possible with previous periods.	Reports prepared and provided to managers incorporating both technical and financial data for the period	Ad hoc checks on premises data base .Ad hoc cursory check on reports and comparison with previous year
0	No information of energy efficiency or consumption available	No measurements taken and no records kept	Information not collected	No energy analyses prepared	No management reports prepared	No auditing function

Detail Matrix 13 - SMALL POWER EQUIPMENT

Level	Market awareness	Purchasing policy	Operational Policy	Operational compliance	Audit
4	Keeping abreast of technological developments by on-going monitoring of trade journals, literature and other sources on issues affecting energy efficiency. Files kept benchmarking state-of-the art.	Equipment selected to be the most appropriate to the application bearing in mind life-cycle costs and energy efficiency. Energy saving features a major consideration in product selection.	Initial assessment and regular re-assessment of each situation to determine the most energy efficient operating mode commensurate with business needs. Time switches and other devices installed where appropriate.	Day to day supervision. Regular checking of time switches & automatic controls to ensure equipment powered down to lowest consumption mode whenever possible.	Daily routine of regular checks to ensure equipment only powered up when necessary.
3	Regular studies carried out on trade journals, literature and other sources to assess current developments impacting on energy efficiency.	Equipment selected to be the most appropriate to the application bearing in mind life-cycle costs and energy efficiency. Energy saving features taken into consideration in product selection	Initial assessment of each situation to determine the most energy efficient operating mode commensurate with business needs.	Equipment only switched on when needed. Power-saving set-ups employed whenever possible to minimise waste	There is a routine of regular checks to ensure equipment only powered up when necessary.
2	Trade journals, literature and other sources scanned on an ad hoc basis for information relating to latest developments relating to energy efficiency..	Equipment selected to be the most appropriate to the application bearing in mind life-cycle costs and energy efficiency.	Departments to be responsible for ensuring that equipment is switched off when not in use.	Equipment switched off when not needed.	Checks regularly carried out to determine whether equipment is switched off out of hours.
1	Trade journals, literature and other sources studied for energy implications when a purchase is imminent	Power efficiency data on products obtained as part of selection process	Users instructed to on y have equipment switched on when required	All equipment switched on at start of day and remains on when ever building occupied.	Ad hoc checks carried out to determine whether equipment is switched off out of hours.
0	Energy efficiency not a consideration when keeping up to date on products or technology	No consideration of energy efficiency in product selection	No policy for ensuring equipment switched off when not in use.	Equipment frequently left running even when building unoccupied	No checks to determine whether equipment is left on even when building is unoccupied

Detail Matrix 14 - SPACE HEATING

Level	Boiler Programmer or Timer and/or Manager Controlling Daily Operation	Boiler output controls	Heat Emissions	Heating Systems	Heating levels And balance	Boiler House Check during Summer or Spring
4	Boiler operation is controlled by a building energy management system, programmed for weekends and holidays, and with self learning optimum start and stop.	Effective automatic control of boiler standing losses. Only those boilers whose output is required are hot, all others cold or cooling. Boilers and manifolds are well insulated.	Radiators have thermostatic valves, fan connectors have individual controls and different areas of the building each have internal temperature sensors (thermostats).	Rigorous checking of controls function, settings, and system balance carried out once per year. Documented procedures and comprehensive records of results.	Temperatures are even throughout the building within - within the range 18°C to 20°C during the periods of occupancy, and reducing to lower temperatures outside those periods.	Boiler-house is cool even when boilers are working.
3	An optimum start controller varies the start time of the boiler according to outside temperatures, and an optimum stop does the equivalent at the end of the day.	Effective manual isolation of boilers to reduce standing losses when full output is not required. Boiler and manifolds are well insulated.	Radiators and fan convectors have individually operated controls. The water supplying radiators only is hotter in mid winter and cooler in autumn and spring.	Full checking of controls function, controls settings, and system balance carried out once per year. Documented procedures exist for each check. Some results on record.	Temperatures are even throughout the building, but in some parts they occasionally rise over 20°C during spring or autumn. 20°C is maintained only during the hours of occupancy.	Boiler -house is warm.
2	There is an optimum start filtered to the boiler.	All boilers become hot only when boiler output is required. Boilers are cold at all other times.	Radiators and fan convectors have individually operated controls but water temperature to the radiators is the same all year round.	Informal checking of controls function and system balance carried out once per year. Schedule of checks exists but no proof of occupancy.	Temperatures above 20°C during spring and autumn, and the building is warm for more than an hour before or after the periods	Boiler-house is very warm.
1	The boiler has a simple timer that can be easily set. Timer settings are adjusted manually to suit seasonal heating requirements.	All boilers remain hot during pre-heat and building occupation hours during summer and winter.	Radiators and heat emitters have basic controls, and there is only one internal temperature sensor to control them.	Annual functional check carried out under contract. No evidence exists on extent of checks or of results obtained.	Temperatures vary and they are frequently above 20°C for long periods - including outside periods of occupancy.	Boiler-house is hot.
0	The timer is in a poor state of repair and cannot be easily adjusted.	All boilers remain hot including when building is unoccupied for at least seven months of the year.	Radiators and heat emitters have no controls and get hot together. Radiator temperatures appear to be the same all year round.	Maintenance is on breakdown basis and controls are checked only when things go wrong.	For much of the building temperatures are frequently too hot, particularly in spring and autumn.	Boiler house is very hot.

ENERGY MANAGEMENT MATRIX

Level	Energy Policy	Organising	Motivation	Information systems	Marketing	Investment
4	Energy policy, action plan and regular review have commitment of top management as part of an environmental strategy	Energy management fully integrated into management structure. Clear delegation of responsibility for energy consumption.	Formal and informal channels of communication regularly exploited by energy manager and energy staff at all levels.	Comprehensive system sets targets, monitors consumption, identifies faults, quantifies savings and provides budget tracking.	Marketing the value of energy efficiency and the performance of energy management both within the organisation and outside it.	Positive discrimination in favour of 'green' schemes with detailed investment appraisal of all new-build and refurbishment opportunities.
3	Formal energy policy, but no active commitment from top management.	Energy manager accountable to energy committee representing all users, chaired by a member of the managing board.	Energy committee used as main channel together with direct contact with major users.	M&T reports for individual premises based on sub-metering, but savings not reported effectively to users.	Programme of staff awareness and regular publicity campaigns.	Same pay back criteria employed as for all other investment.
2	Un-adopted energy policy set by energy manager or senior departmental manager.	Energy manager in post, reporting to ad-hoc committee, but line management and authority are unclear.	Contact with major users through ad-hoc committee chaired by senior departmental manager.	Monitoring and targeting reports based on supply meter data. Energy unit has ad-hoc involvement in budget setting.	Some ad-hoc staff awareness training.	Investment using short-term payback criteria only.
1	An unwritten set of guidelines	Energy management is the part-time responsibility of someone with limited authority or influence	Informal contacts between engineer and a few users.	Cost reporting based on invoice data. Engineer compiles reports for internal use within technical department.	Informal contacts used to promote energy efficiency.	Only low cost measures taken.
0	No explicit policy	No energy management or any formal delegation of responsibility for energy consumption	No contact with users.	No information system. No accounting for energy consumption.	No promotion of energy efficiency.	No investment in increasing energy efficiency in premises.

END OF DOCUMENT